

AMENDMENTS

IN THE CLAIMS:

Please cancel claim 19 without prejudice or disclaimer.

Please amend claims 5, 10-11, 13, 15, 17, 20, 28, 30, 32-34, 36, and 38-40 as follows:

B1 5. (Amended) A liquid crystal display device comprising: a first substrate made of a transparent material, provided with signal electrodes or display electrodes formed on one face thereof; a second substrate made of a transparent material, provided with opposed electrodes formed thereon; and liquid crystal sealed in-between the first substrate and the second substrate, oppositely disposed to each other with a predetermined gap interposed therebetween such that each of the signal electrodes or the display electrodes faces each of the opposed electrodes so as to form a pixel, characterized in that

a polarizing film without reflection characteristics is disposed on the visible side of the first substrate,

and
C, a white diffusing film is disposed adjacently to the second substrate, on a side of the second substrate, opposite the liquid crystal,

a polarizing film is disposed on a side of the white diffusing film, opposite the second substrate, and

C a reflector is disposed on a side of the polarizing film, opposite the white diffusing film;

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said white diffusing film has the characteristics of allowing circularly polarized light to pass therethrough substantially as the circularly polarized light, and having a substantially equal transmittance for light components at respective wavelengths in the wavelength range of visible light.

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10. (Twice Amended) A liquid crystal display device comprising: a first substrate made of a transparent material, provided with signal electrodes or display electrodes formed on one surface thereof; a second substrate made of a transparent material, provided with opposed electrodes formed thereon; and liquid crystal sealed in-between the first substrate and the second substrate, oppositely disposed to each other with a predetermined gap interposed therebetween such that each of the signal electrodes or the display electrodes faces each of the opposed electrodes so as to form a pixel, characterized in that

a white diffusing film is disposed adjacently to the second substrate on a side of the second substrate, opposite the liquid crystal, and

a reflector is disposed on a side of the white diffusing film, opposite the second substrate;

said white diffusing film has the characteristics of allowing circularly polarized light to pass therethrough substantially as the circularly polarized light, and having a substantially equal transmittance for light components at respective wavelengths in the wavelength range of visible light, and said reflector being made up of a reflection-type polarizing film, wherein one of the optic axes thereof is the transmission axis and the other, substantially orthogonal to the transmission axis, is the reflection axis.

11. (Twice Amended) A liquid crystal display device comprising: a first substrate made of a transparent material, provided with signal electrodes or display electrodes formed on one face

thereof; a second substrate made of a transparent material, provided with opposed electrodes formed thereon; and liquid crystal sealed in-between the first substrate and the second substrate, oppositely disposed to each other with a predetermined gap interposed therebetween such that each of the signal electrodes or the display electrodes faces each of the opposed electrodes so as to form a pixel, characterized in that

a white diffusing film is disposed on the visible side of the first substrate,

a polarizing film without reflection characteristics is disposed on the visible side of the white diffusing film, and

a reflector is provided on a side of the second substrate, opposite the liquid crystal;

said white diffusing film has the characteristics of allowing circularly polarized light to pass therethrough substantially as the circularly polarized light, and having a substantially equal transmittance for light components at respective wavelengths in the wavelength range of visible light, and said reflector being made up of a reflection-type polarizing film, wherein one of the optic axes thereof is the transmission axis and the other, substantially orthogonal to the transmission axis, is the reflection axis.

13. (Twice Amended) A liquid crystal display device comprising: a first substrate made of a transparent material, provided with signal electrodes or display electrodes formed on one face thereof; a second substrate made of a transparent material, provided with opposed electrodes formed thereon; and liquid crystal sealed in-between the first substrate and the second substrate, oppositely disposed to each other with a predetermined gap interposed therebetween such that each of the signal

electrodes or the display electrodes faces each of the opposed electrodes so as to form a pixel, characterized in that

a polarizing film without reflection characteristics is disposed on the visible side of the first substrate,

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a polarizing film without reflection characteristics is disposed on a side of the second substrate, opposite the liquid crystal,

a white diffusing film is disposed on a side of the polarizing film, opposite the second substrate, and

a reflector is disposed on a side of the white diffusing film, opposite the polarizing film;

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said white diffusing film has the characteristics of allowing circularly polarized light to pass therethrough substantially as the circularly polarized light, and having a substantially equal transmittance for light components at respective wavelengths in the wavelength range of visible light, and said reflector being made up of a reflection-type polarizing film, wherein one of the optic axes thereof is the transmission axis and the other, substantially orthogonal to the transmission axis, is the reflection axis.

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15. (Twice Amended) A liquid crystal display device comprising: a first substrate made of a transparent material, provided with signal electrodes or display electrodes, formed on one face thereof; a second substrate made of a transparent material, provided with opposed electrodes formed thereon; and liquid crystal sealed in-between the first substrate and the second substrate, oppositely disposed to each other with a predetermined gap interposed therebetween such that each of the signal

electrodes of the display electrodes faces each of the opposed electrodes so as to form a pixel, characterized in that

a polarizing film without reflection characteristics is disposed on the visible side of the first substrate,

a polarizing film without reflection characteristics is disposed on a side of the second substrate, opposite the liquid crystal,

a white diffusing film is disposed on a side of the polarizing film, opposite the second substrate, and

a reflector is disposed on a side of the white diffusing film, opposite the polarizing film;

said white diffusing film has the characteristics of allowing circularly polarized light to pass therethrough substantially as the circularly polarized light, and having a substantially equal transmittance for light components at respective wavelengths in the wavelength range of visible light, and said reflector being made up of a holographic film in which regions having different refractive indices are spatially distributed.

17. (Amended) A liquid crystal display device according to claim 5, wherein

a color printed layer is disposed adjacently to the white diffusing film between the second substrate and the reflector, and said color printed layer has the characteristics of allowing circularly polarized light to pass therethrough substantially as the circularly polarized light and has a transmittance having wavelength dependency.

b7 20. (Amended) A liquid crystal display device according to claim 17, wherein the color printed layer is composed of a plurality of portions, each having a transmittance having a wavelength characteristics in the wavelength range of visible light.

b7 28. (Amended) A liquid crystal display device according to claim 20, wherein the white diffusing film is made of a complex substance comprised of resin beads and a synthetic resin having a refractive index differing from that of the resin beads, and has a light-scattering characteristics due to the difference in refractive indices therebetween.

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b8 30. (Twice Amended) A liquid crystal display device comprising: a first substrate made of a transparent material, provided with signal electrodes or display electrodes formed on one face thereof; a second substrate made of a transparent material, provided with opposed electrodes formed thereon; and liquid crystal sealed in-between the first substrate and the second substrate, oppositely disposed to each other with a predetermined gap interposed therebetween such that each of the signal electrodes or the display electrodes faces each of the opposed electrodes so as to form a pixel, characterized in that

a polarizing film without reflection characteristics is disposed on the visible side of the first substrate,

a polarizing film without reflection characteristics is disposed on a side of the second substrate, opposite the liquid crystal,

a white diffusing film is disposed on a side of the polarizing film, opposite the second substrate, and

a reflector is disposed on a side of the white diffusing film, opposite the polarizing film;

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said white diffusing film is a white diffusing film having the characteristics of allowing circularly polarized light to pass therethrough substantially as the circularly polarized light, and having a substantially equal transmittance for light components at respective wavelengths in the wavelength range of visible light, provided with a plurality of projections and depressions formed on the surface thereof, causing a portion of light incident on the surface to undergo diffuse reflection and remaining portions of the light to be transmitted therethrough, said projections and depressions formed on the surface being in a shape approximating to a quadratic curve,

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and said reflector is a transfective reflector having the characteristics of having a substantially equal transmittance for light components at respective wavelengths in the wavelength range of visible light.

32. (Twice Amended) A liquid crystal display device comprising: a first substrate made of a transparent material, provided with signal electrodes or display electrodes formed on one face thereof; a second substrate made of a transparent material, provided with opposed electrodes formed thereon; and liquid crystal sealed in-between the first substrate and the second substrate, oppositely disposed to each other with a predetermined gap interposed therebetween such that each of the signal electrodes or the display electrodes faces each of the opposed electrodes so as to form a pixel, characterized in that

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a white diffusing film is disposed on a side of the second substrate, opposite the liquid crystal, and

a reflector is disposed on a side of the white diffusing film, opposite the second substrate;

said white diffusing film having the characteristics of allowing circularly polarized light to pass therethrough substantially as the circularly polarized light, and having a substantially equal transmittance for light components at respective wavelengths in the wavelength range of visible light, provided regions corresponding to respective pixels, having diffusibility differing from that for regions thereof, around the respective pixels.

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33. (Twice Amended) A liquid crystal display device comprising: a first substrate made of a transparent material, provided with signal electrodes or display electrodes formed on one face thereof; a second substrate made of a transparent material, provided with opposed electrodes formed thereon; and liquid crystal sealed in-between the first substrate and the second substrate, oppositely disposed to each other with a predetermined gap interposed therebetween such that each of the signal electrodes or the display electrodes faces each of the opposed electrodes so as to form a pixel, characterized in that

a white diffusing film is disposed on a side of the second substrate, opposite the liquid crystal, and

a reflector is disposed on a side of the white diffusing film, opposite the second substrate;

said white diffusing film has the characteristics of allowing circularly polarized light to pass therethrough substantially as the circularly polarized light, and having a substantially equal transmittance for light components at respective wavelengths in the wavelength range of visible light, provided regions corresponding to respective pixels, having a transmittance differing from that for regions thereof, around the respective pixels.

34. (Amended) A liquid crystal display device comprising: a first substrate made of a transparent material, provided with signal electrodes or display electrodes formed on one face thereof; a second substrate made of a transparent material, provided with opposed electrodes formed thereon; and liquid crystal sealed in-between the first substrate and the second substrate, oppositely disposed to each other with a predetermined gap interposed therebetween such that each of the signal electrodes or the display electrodes faces each of the opposed electrodes so as to form a pixel, characterized in that

a white diffusing film is disposed on a side of the second substrate, opposite the liquid crystal, and

a reflector is disposed on a side of the white diffusing film, opposite the second substrate, said white diffusing film allowing circularly polarized light to pass therethrough substantially as the circularly polarized light, and said pixels being provided with color filters.

36. (Amended) A liquid crystal display device according to claim 6, wherein an auxiliary light source is provided on a side of the transfective reflector, opposite the visible side.

38. (Amended) A liquid crystal display device according to claim 10, wherein an auxiliary light source is provided on a side of the reflection-type polarizing film, opposite the visible side.

39. (Amended) A liquid crystal display device according to claim 11, wherein an auxiliary light source is provided on a side of the reflection-type polarizing film, opposite the visible side.

40. (Twice Amended) A liquid crystal display device according to claim 5, wherein the white diffusing film is made up of a diffusing-type liquid crystal layer for diffusing light.

Please add new claims 48-54 as follows:

48. A liquid crystal display device according to claim 10, wherein
a color printed layer is disposed adjacently to the white diffusing film between the second substrate and the reflector, and

512 said color printed layer has the characteristics of allowing circularly polarized light to pass therethrough substantially as the circularly polarized light and has a transmittance having wavelength dependency.

49. A liquid crystal display device according to claim 13, wherein
a color printed layer is disposed adjacently to the white diffusing film between the second substrate and the reflector, and

said color printed layer has the characteristics of allowing circularly polarized light to pass therethrough substantially as the circularly polarized light and has a transmittance having wavelength dependency.

50. A liquid crystal display device according to claim 17, wherein
a light absorption layer is disposed on a side of the reflector, opposite the white diffusing film.

51. A liquid crystal display device according to claim 48, wherein
a light absorption layer is disposed on a side of the reflector, opposite the white diffusing film.

52. A liquid crystal display device according to claim 49, wherein
a light absorption layer is disposed on a side of the reflector, opposite the white diffusing film.

53. A liquid crystal display device according to claim 12, wherein an auxiliary light source is provided on a side of the reflection-type polarizing film, opposite the visible side.

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Group Art Unit: 2871

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54. A liquid crystal display device according to claim 13, wherein an auxiliary light source is provided on a side of the reflection-type polarizing film, opposite the visible side.

MARKED-UP VERSION OF AMENDMENTS

IN THE CLAIMS:

Claim 19 has been canceled without prejudice or disclaimer.

Claims 5, 10-11, 13, 15, 17, 20, 28, 30, 32-34, 36, and 38-40 have been amended as follows:

5. (Amended) A liquid crystal display device comprising: a first substrate made of a transparent material, provided with signal electrodes or display electrodes formed on one face thereof; a second substrate made of a transparent material, provided with opposed electrodes formed thereon; and liquid crystal sealed in-between the first substrate and the second substrate, oppositely disposed to each other with a predetermined gap interposed therebetween such that each of the signal electrodes or the display electrodes faces each of the opposed electrodes so as to form a pixel, characterized in that

a polarizing film without reflection characteristics is disposed on the visible side of the first substrate,

a white diffusing film is disposed adjacently to the second substrate, on a side of the second substrate, opposite the liquid crystal,

a polarizing film is disposed on a side of the white diffusing film, opposite the second substrate, and

a reflector ~~are~~ is disposed ~~in that order on a the outer side of the second substrate~~ polarizing film, opposite the white diffusing film;

said white diffusing film has the characteristics of allowing circularly polarized light to pass therethrough substantially as the circularly polarized light, and having a substantially equal transmittance for light components at respective wavelengths in the wavelength range of visible light.

10. (Twice Amended) A liquid crystal display device comprising: a first substrate made of a transparent material, provided with signal electrodes or display electrodes formed on one surface thereof; a second substrate made of a transparent material, provided with opposed electrodes formed thereon; and liquid crystal sealed in-between the first substrate and the second substrate, oppositely disposed to each other with a predetermined gap interposed therebetween such that each of the signal electrodes or the display electrodes faces each of the opposed electrodes so as to form a pixel, characterized in that

a white diffusing film is disposed adjacently to the second substrate on a side of the second substrate, opposite the liquid crystal, and

a reflector ~~are~~ is ~~disposed in that order from the first substrate side on a side of the white~~ diffusing film, opposite the second substrate;

said white diffusing film has the characteristics of allowing circularly polarized light to pass therethrough substantially as the circularly polarized light, and having a substantially equal transmittance for light components at respective wavelengths in the wavelength range of visible light, and said reflector being made up of a reflection-type polarizing film, wherein one of the optic axes thereof is the transmission axis and the other, substantially orthogonal to the transmission axis, is the reflection axis.

11. (Twice Amended) A liquid crystal display device comprising: a first substrate made of a transparent material, provided with signal electrodes or display electrodes formed on one face thereof; a second substrate made of a transparent material, provided with opposed electrodes formed thereon; and liquid crystal sealed in-between the first substrate and the second substrate, oppositely disposed to each other with a predetermined gap interposed therebetween such that each of the signal electrodes or the display electrodes faces each of the opposed electrodes so as to form a pixel, characterized in that

~~a polarizing film and a white diffusing film are~~ is disposed in that order from on the visible side ~~on top~~ of the first substrate,

a polarizing film without reflection characteristics is disposed on the visible side of the white diffusing film, and

a reflector is provided on ~~top of a side of~~ the second substrate, opposite the liquid crystal;

said white diffusing film has the characteristics of allowing circularly polarized light to pass therethrough substantially as the circularly polarized light, and having a substantially equal transmittance for light components at respective wavelengths in the wavelength range of visible light, and said reflector being made up of a reflection-type polarizing film, wherein one of the optic axes thereof is the transmission axis and the other, substantially orthogonal to the transmission axis, is the reflection axis.

13. (Twice Amended) A liquid crystal display device comprising: a first substrate made of a transparent material, provided with signal electrodes or display electrodes formed on one face

thereof; a second substrate made of a transparent material, provided with opposed electrodes formed thereon; and liquid crystal sealed in-between the first substrate and the second substrate, oppositely disposed to each other with a predetermined gap interposed therebetween such that each of the signal electrodes or the display electrodes faces each of the opposed electrodes so as to form a pixel, characterized in that

a polarizing film without reflection characteristics is disposed on the visible side of the first substrate,

~~while~~ a polarizing film without reflection characteristics is disposed on a side of the second substrate, opposite the liquid crystal,

a white diffusing film is disposed on a side of the polarizing film, opposite the second substrate, and

a reflector ~~are~~ is disposed ~~in that order on the outer a~~ side of the ~~second substrate~~ white diffusing film, opposite the polarizing film;

said white diffusing film has the characteristics of allowing circularly polarized light to pass therethrough substantially as the circularly polarized light, and having a substantially equal transmittance for light components at respective wavelengths in the wavelength range of visible light, and said reflector being made up of a reflection-type polarizing film, wherein one of the optic axes thereof is the transmission axis and the other, substantially orthogonal to the transmission axis, is the reflection axis.

15. (Twice Amended) A liquid crystal display device comprising: a first substrate made of a transparent material, provided with signal electrodes or display electrodes, formed on one face

thereof; a second substrate made of a transparent material, provided with opposed electrodes formed thereon; and liquid crystal sealed in-between the first substrate and the second substrate, oppositely disposed to each other with a predetermined gap interposed therebetween such that each of the signal electrodes or the display electrodes faces each of the opposed electrodes so as to form a pixel, characterized in that

a polarizing film without reflection characteristics is disposed on the visible side of the first substrate,

a polarizing film without reflection characteristics is disposed on a side of the second substrate, opposite the liquid crystal,

a white diffusing film is disposed on a side of the polarizing film, opposite the second substrate, and

a reflector ~~are~~ is disposed ~~in that order on the outer~~ a side of the ~~second substrate~~ white diffusing film, opposite the polarizing film;

said white diffusing film has the characteristics of allowing circularly polarized light to pass therethrough substantially as the circularly polarized light, and having a substantially equal transmittance for light components at respective wavelengths in the wavelength range of visible light, and said reflector being made up of a holographic film in which regions having different refractive indices are spatially distributed.

17. (Amended) A liquid crystal display device ~~comprising a first substrate made of a transparent material, provided with signal electrodes or display electrodes formed on one face thereof; a second substrate made of a transparent material, provided with opposed electrodes formed thereon;~~

~~and liquid crystal sealed in-between the first substrate and the second substrate, oppositely disposed to each other with a predetermined gap interposed therebetween such that each of the signal electrodes or the display electrodes faces each of the opposed electrodes so as to form a pixel according to claim 5, characterized in that wherein~~

~~a color printed layer and a white diffusing film are is disposed adjacently to the white diffusing film in an optional order on between the second substrate and the reflector, and while a reflector is disposed on a side of the color printed layer or the white diffusing film, opposite the visible side, — said white diffusing film and said color printed layer has the characteristics of allowing circularly polarized light to pass therethrough substantially as the circularly polarized light; respectively, said white diffusing film having the characteristics of having a substantially equal transmittance for light components at respective wavelengths in the wavelength range of visible light; and further, said color printed layer and has a transmittance having wavelength dependency.~~

20. (Amended) A liquid crystal display device according to claim ~~19~~ 17, wherein the color printed layer ~~or the light absorption layer~~ is composed of a plurality of portions, each having a transmittance having a wavelength characteristics in the wavelength range of visible light.

28. (Amended) A liquid crystal display device according to claim ~~19~~ 20, wherein the white diffusing film is made of a complex substance comprised of resin beads and a synthetic resin having a refractive index differing from that of the resin beads, and has a light-scattering characteristics due to the difference in refractive indices therebetween.

30. (Twice Amended) A liquid crystal display device comprising: a first substrate made of a transparent material, provided with signal electrodes or display electrodes formed on one face thereof;

a second substrate made of a transparent material, provided with opposed electrodes formed thereon; and liquid crystal sealed in-between the first substrate and the second substrate, oppositely disposed to each other with a predetermined gap interposed therebetween such that each of the signal electrodes or the display electrodes faces each of the opposed electrodes so as to form a pixel, characterized in that

a polarizing film without reflection characteristics is disposed on the visible side of the first substrate,

a polarizing film without reflection characteristics is disposed on a side of the second substrate, opposite the liquid crystal,

a white diffusing film is disposed on a side of the polarizing film, opposite the second substrate, and

a reflector ~~are~~ is disposed ~~in that order on the outer~~ a side of the ~~second substrate~~ white diffusing film, opposite the polarizing film;

said white diffusing film is a white diffusing film having the characteristics of allowing circularly polarized light to pass therethrough substantially as the circularly polarized light, and having a substantially equal transmittance for light components at respective wavelengths in the wavelength range of visible light, provided with a plurality of projections and depressions formed on the surface thereof, causing a portion of light incident on the surface to undergo diffuse reflection and remaining portions of the light to be transmitted therethrough, said projections and depressions formed on the surface being in a shape approximating to a quadratic curve,

and said reflector is a transfective reflector having the characteristics of having a substantially equal transmittance for light components at respective wavelengths in the wavelength range of visible light.

32. (Twice Amended) A liquid crystal display device comprising: a first substrate made of a transparent material, provided with signal electrodes or display electrodes formed on one face thereof; a second substrate made of a transparent material, provided with opposed electrodes formed thereon; and liquid crystal sealed in-between the first substrate and the second substrate, oppositely disposed to each other with a predetermined gap interposed therebetween such that each of the signal electrodes or the display electrodes faces each of the opposed electrodes so as to form a pixel, characterized in that

a white diffusing film is disposed on a side of the second substrate, opposite the liquid crystal,
and

a reflector ~~are is disposed in that order from the first substrate side on~~ a side of the white diffusing film, opposite the second substrate;

said white diffusing film having the characteristics of allowing circularly polarized light to pass therethrough substantially as the circularly polarized light, and having a substantially equal transmittance for light components at respective wavelengths in the wavelength range of visible light, provided regions corresponding to respective pixels, having diffusibility differing from that for regions thereof, around the respective pixels.

33. (Twice Amended) A liquid crystal display device comprising: a first substrate made of a transparent material, provided with signal electrodes or display electrodes formed on one face thereof;

a second substrate made of a transparent material, provided with opposed electrodes formed thereon; and liquid crystal sealed in-between the first substrate and the second substrate, oppositely disposed to each other with a predetermined gap interposed therebetween such that each of the signal electrodes or the display electrodes faces each of the opposed electrodes so as to form a pixel, characterized in that

a white diffusing film is disposed on a side of the second substrate, opposite the liquid crystal, and

a reflector ~~are is disposed in that order from the first substrate side~~ on a side of the white diffusing film, opposite the second substrate;

said white diffusing film has the characteristics of allowing circularly polarized light to pass therethrough substantially as the circularly polarized light, and having a substantially equal transmittance for light components at respective wavelengths in the wavelength range of visible light, provided regions corresponding to respective pixels, having a transmittance differing from that for regions thereof, around the respective pixels.

34. (Amended) A liquid crystal display device comprising: a first substrate made of a transparent material, provided with signal electrodes or display electrodes formed on one face thereof; a second substrate made of a transparent material, provided with opposed electrodes formed thereon; and liquid crystal sealed in-between the first substrate and the second substrate, oppositely disposed to each other with a predetermined gap interposed therebetween such that each of the signal electrodes or the display electrodes faces each of the opposed electrodes so as to form a pixel, characterized in that

a white diffusing film is disposed on a side of the second substrate, opposite the liquid crystal,
and

a reflector ~~are is~~ disposed ~~in that order from the first substrate side~~ on a side of the white
diffusing film, opposite the second substrate,

said white diffusing film allowing circularly polarized light to pass therethrough substantially
as the circularly polarized light, and said pixels being provided with color filters.

36. (Amended) A liquid crystal display device according to claim 6, wherein an auxiliary light
source is provided on a side of the ~~second substrate~~ transflective reflector, opposite the visible side.

38. (Amended) A liquid crystal display device according to claim ~~17~~ 10, wherein an auxiliary
light source is provided on a side of the ~~second substrate~~ reflection-type polarizing film, opposite the
visible side.

39. (Amended) A liquid crystal display device according to claim ~~34~~ 11, wherein an auxiliary
light source is provided on a side of the ~~second substrate~~ reflection-type polarizing film, opposite the
visible side.

40. (Twice Amended) A liquid crystal display device according to claim 6 5, wherein the
white diffusing film is made up of a diffusing-type liquid crystal layer for diffusing light.

New claims 48-54 have been added.